

TECHNICAL REPORT TO THE NEW YORK STATE IPM GRANTS PROGRAM

Title: Reducing Damage from Potato Leafhoppers on Alfalfa in New York through Cultivar Selection: A Comparison of Resistant vs. Susceptible Cultivars

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Abstract:

Advanced generations of alfalfa (*Medicago sativa* L.) cultivars and experimentals (entries) resistant to potato leafhopper (PLH), *Empoasca fabae* (Harris), were released in 1998 and planted in Ithaca that year. Entries released in 1999 were planted in a separate trial this spring. Both trials were designed as split-plots with the main plots as insecticide treatment vs. no treatment and the sub-plots as entries resistant and susceptible to PLH. In 1999 PLH populations went above threshold immediately prior to harvest 2 (28 July) in both trials. Yields in these trials were reduced overall due to severe drought. In the seeding year trial, plots in the sprayed treatment had negligible PLH adults, fewer nymphs, and lower PLH damage scores than plots in the unsprayed treatment; however, the differences in yield noted visually were not statistically significant. In the first production year, plots in the sprayed treatment had fewer PLH adults, nymphs, lower PLH damage scores, and higher percent bloom and yield than plots in the unsprayed treatment. In both the seeding year and first production year trials, the unsprayed resistant entries had lower yield, higher forage quality, and lower value per acre (-\$15/acre seeding year, -\$24/acre first production year) than the sprayed susceptible entries.

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